

*Polypodium speluncae* L. was first by Moore identified with *Davallia polypodiodes* Hk., which species is since commonly called *Microlepia speluncae*. Whether Moore was correct in that identification is unfortunately not quite sure. According to B. D. Jackson,<sup>1</sup> no specimen of *P. spelunca* is to be found in the Linnaean Herbarium.

SUMMARY: The combination *Dryopteris speluncae* (L.) Und. is not well founded, and it ought not to have been published. The Bermuda plant is probably *D. ampla*, as given in my forthcoming revision of the American decompound species of *Dryopteris*. *Polypodium speluncae* L. may be the species generally called *Microlepia speluncae* (L.) Moore, but this is not proved, certainly it is not *D. ampla*.

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## Wayside ferns of the Dolomites

C. A. WEATHERBY

The route through the Dolomite region, which is usually followed by travelers arriving from the south, runs from Belluno in northeastern Italy, where the railway stops, by way of Cortina and the new "Dolomites Road," to Bozen in the valley of the Adige. Geologically speaking, it hardly touches the real Dolomites at all. For three-quarters of its length, it traverses a belt of "more or less pure" Triassic limestone which wholly lacks the high percentage of magnesium characteristic of true dolomite. For the latter part of the way, on the descent through the Eggenthal to Bozen, the prevailing rock is a rather close-grained, purplish porphyry, in appearance very like

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<sup>1</sup> Index to the Linnaean Herbarium. Proceedings of the Linnaean Soc. London 124th Session 1912: 120. 1912.



the African porphyry with which the ancient Romans were wont to decorate their temples and baths. This is a siliceous rock, containing very little lime.

If the name of the "Dolomites Road" is, scientifically, something of a misnomer, no exception can be taken to the scenery which it displays. The first few miles out of Belluno are, indeed, comparatively uninteresting; but once in the Ampezzo valley, one enters a region of peculiar and distinctive beauty. Smooth green pastured slopes lead up and into forests of larch, above which, in the near distance, tower the bare rock summits of the mountains. They are not orthodox summits: besides tending to a pinky gray color, somewhat frivolous for mountains of their size and probable age, they are strangely splintered and serrated, and fantastic in outline. Their very names—Tofana, Pomogognon, Antelao—are strange and as if especially designed to express the singularity of the peaks to which they belong.

If the traveler is botanically inclined and if, as we did, he avoids the too rapid motor-diligence and travels in the old-fashioned way, by carriage—and still more if, as in our case, his carriage is ballasted with some two hundred and fifty pounds of driver—he will have considerable opportunity, not only to take in the greater features of the landscape, but to observe the abundant and varied vegetation by the way. Our journey was made in June, and our eyes were first caught and long held by the profusion of gaily-colored flowers in the mowing-fields at the bottom of the valley.

When we had somewhat recovered from the impression made by their abundance and their very real beauty, we were moved to uneasy reflections by these flowers. For the fields which they completely overrun are evidently hay-fields; and I, at least, had been accustomed to suppose that hay should be made of grass. But here it is



made of—to name its more prominent constituents—blue sage, yellow-rattle, a species or two of the *Leguminosae*, a lousewort, globe-flowers, a very dark purple columbine, a pale lavender plantain, an occasional harebell or *Phyteuma*, two or three species of *Orchis*, an undergrowth of *Euphrasia* and *Viola tricolor* and two or three composites of the hawkweed persuasion, thrown in for good measure. Grass is, apparently, a negligible element. The Dolomite cows must need all their stomachs to dispose properly of so mixed a diet. However, we were forced to conclude that it agreed with them; for they produce excellent butter and are expert mountain-climbers in addition.

A great part of my own wayside observations was devoted to ferns, since most of the species in that group were either familiar to me or readily recognizable. In the Ampezzo valley, the commonest species was *Cystopteris fragilis*—so common that my notes dismiss it with the single word “everywhere.”

A good second, in point of abundance, was the wall-rue spleenwort, *Asplenium Ruta-muraria*. To one who lives in a sandy New England valley, and is obliged to travel many miles and to seek out certain particular ledges in order to get a sight of it, the abundance of this species in the southern Tyrol is positively disconcerting. It grows vulgarly as a weed, in the crevices of every old wall and on every rocky bank. We realized how well it deserved its old name of “Wall-rue.” It is extraordinarily tolerant of differences in degree of light, growing, with apparently equal satisfaction, on the open roadside and on densely shaded boulders in the woods. In America, it is pretty strictly a lime-loving plant; but according to Dalla Torre and Sarntheim’s “Flora von Tirol,” it is here also tolerant of chemically different substrata. It is said to occur frequently about Bozen on porphyritic



rocks which show no effervescence when tested with acid, and far from any source of calcareous sediment. As would be expected in a plant of so diverse habitat, it develops considerable differences in the size and shape of the fronds and numerous named varieties are recorded in local floras.

A frequent companion of the wall-rue on walls and waysides is the maiden-hair spleenwort, *Asplenium Trichomanes*. It does not, however, penetrate the woods. There, on shaded, mossy boulders and ledges, its place is taken by *Asplenium viride*, distinguishable at a glance by its green rachis. *A. viride* seems to prefer not only more shaded situations, but also higher altitudes, than *A. Trichomanes*.

Another frequent species of open rich woods is *Phegopteris Robertiana*. The "Flora von Tirol" reports *Ph. Dryopteris* as also common in the region which we traversed. Even with our leisurely manner of traveling, we could not stop to search for glands on every specimen of beech fern we passed, nor always make out clearly the outline of the frond from our moving carriage; but all the plants I saw seemed to be, and all that I examined surely were, *Ph. Robertiana*. In moist places in the woods, individual specimens sometimes attain a remarkably large size for this species—so large that, from a little distance, it would be easy to mistake them for small plants of *Pteris aquilina*.

The bracken, though occasional all along our route, was nowhere abundant and, when seen, was somewhat small and starved looking. Nowhere were there such thickets of fronds shoulder-high as may be seen in England. Another familiar species, *Asplenium Filix-femina*, was similarly occasional throughout our course but never in great quantity.

From Cortina in the upper Ampezzo valley, we made a



side excursion, over an exceedingly rough wood-road, to a place where an ancient and insecure wooden bridge, high up over a turbulent stream, commands a view of distant mountains, framed in by the sides of a wild and wooded ravine. It also commanded a view of the finest and most completely inaccessible specimens of *Asplenium viride* I ever saw. Here, in rocky woods, were several trim clumps of the holly fern, *Polystichum Lonchitis*, looking like a smaller, neater and more elegant edition of our own Christmas fern. Here, too, in a cold springy place by the roadside, where the ground was covered with the interlaced stems of an alpine willow, *Salix reticulata*, were large patches of the pretty fern-ally, *Selaginella selaginoides*.

Our last stopping-place before reaching Bozen was at Karersee, near the summit of the watershed between the Fassathal and the Eggenthal. The "See" is insignificant—nowhere, I believe, are tinier bodies of water dignified with the name of "lake" than in the eastern Alps—but the forest which surrounds it is magnificent. It is a pure, not very dense stand of tall old Norway spruces. It shows no obvious signs of having ever been lumbered and, unlike most forests of this region, none of having been pastured. The ground under the trees is covered with unimaginable quantities of deep, soft moss, in which grow delightful woodland plants. The most interesting, perhaps, was a little orchid, *Listera cordata*, which here occurred in abundance, in two forms, one with green, the other with brownish flowers. Here were old friends—the wood sorrel, *Oxalis Acetosella*, *Lycopodium annotinum* and, in the way of ferns proper, *Dryopteris spinulosa* and *Phegopteris polypodioides*, both seen only here. Here, too, we saw for the first time *Dryopteris Filix-mas* and for the only time, the delicate triangular fronds of *Cystopteris montana*.



After leaving Karersee, we passed out of the limestone belt into the porphyry and at once a familiar fern, *Polypodium vulgare*, hitherto unseen, made its appearance. All down the Eggenthal it clothed the tops of boulders and fringed the crests of ledges, quite in New England fashion. At Klobenstein, near Bozen, we were pleased to find that queer fern, *Asplenium septentrionale*. It grew in the crevices of a loosely laid stone wall, in the full glare of the sun, its crowded linear fronds looking like tufts of coarse grass.

And with it, we saw the last of our Dolomite ferns.

EAST HARTFORD, CONN.